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EXAMINER	
LEE, HWA C	
ART UNIT	**PAPER NUMBER**
2672	2

DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	10/027,604	FERNANDO, CHENJING	
	Examiner	Art Unit	
	Hwa C Lee	2672	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on ____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5)☐ Claim(s) ____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☒ Claim(s) *13 and 14* is/are objected to.

8)☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/19/2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on ____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. ____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: In paragraph [0031], line 4, "*bit period*" is misspelled as "*but period*".

Appropriate correction is required.

Claims

2. When deemed necessary, the examiner's rationales behind all claim rejections are attached using {}. Also, all prior art references are inserted at appropriate places using ().

Claim Objections

3. Claims 13 and 14 are objected to because of the following informalities: As currently disclosed, an apparatus (the storage) in claim 13 incorrectly refers back to a method in claim 5. It appears that claim 13 should depend on claim 8 or one of it's dependents. Appropriate correction is required. However, for the purpose of finding prior art against the claims, claim 13 will be treated as depending on claim 5 as currently disclosed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 13 and 14 recite the limitation of "the storage further comprises instructions for the processor to determine" in column 4, line 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1, 4-8, and 11-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Miller, U.S. Patent No. 6,311,138.

In reference to claim 1, Miller discloses ***a method of displaying an input signal, the method comprising***.

(a) Miller discloses the limitation of *"sampling the input signal"* in the following:

- Each digitization channel comprises a sample-and-hold circuit (col. 3, lines 54-55).
- The step of making the primary measurements of the signal comprises detecting a voltage of the signal at time intervals (col. 9, lines 58-60).
- Repeatedly sampling and digitizing a signal (col. 11, line 7).
- A sample-and-hold circuit that freezes the signal (col. 12, line 1).

(b) Miller discloses the limitation of "*searching for a zero space pattern in the sampled signal*" in the following:

- Identifying cycles in the signal and then calculating the parameter for each of these cycles (col. 3, lines 12-13 and Fig. 7) {a cycle is interpreted to include "*a zero space pattern*" and thus the parameter for each cycles is also interpreted to include "*a zero space pattern*"}.
- Comparing the data from the primary measurement to a threshold (col. 10, lines 1-3) {according to the applicant, "*a zero space pattern*" is identified by making a comparison to a threshold voltage value at appropriate time points}.
- Comparing the primary measurements in each cycle to a threshold (col. 10, lines 58-59) {same reasoning as above}.

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time the signal falls below the threshold' is interpreted as "*the zero space*"}.

(c) Miller discloses the limitation of "*locating a first zero space*" in the following:

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time the signal falls below the threshold' is interpreted as "*the zero space*"}.
- Determining times which the primary measurement data exceed the threshold…fall below the threshold (col. 10, lines 4-11) {according to the applicant, "*a zero space*" is bounded by a fall below the threshold followed by a rise above the threshold; 'times' is plural meaning more than one and therefore interpreted as having "*a first zero space*"}.

(d) Miller discloses the limitation of "*locating a second zero space, following the first zero space*" in the following:

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time the signal falls below the threshold' is interpreted as "*the zero space*"}.
- Determining times which the primary measurement data exceed the threshold…fall below the threshold (col. 10, lines 4-11) {according to the

applicant, "*a zero space*" is bounded by a fall below the threshold followed by a rise above the threshold; 'times' is plural meaning more than one and therefore interpreted as having "*a first zero space*", and "*a second zero space*"}

(e) Miller discloses the limitation of "*calculating bit period of the input signal*" in the following:

- The step of deriving the parameters further comprises determining a period for each cycle (col. 10, lines 31-33).
- Determining a change in period in cycles (col. 10, lines 49-51).

(f) Miller discloses the limitation of "*displaying the input signal using the calculated bit period as the basis for a scale*" in the following:

- The array holding the derived parameters is padded to facilitate scaling operation such as zoom operations, performed for signal display (col. 4, lines 3-5) {'derived parameters' includes "*calculated bit period*"}.
- The step of displaying the primary measurement data {interpreted as "*displaying the input signal*"} and the derived parameters {interpreted as "*calculated bit period*"} comprises plotting the detected voltages and derived parameters along a horizontal time axis {interpreted as "*using the calculated bit period as the basis of the scale*" since the "*bit period*" is time dependent} (col. 9, lines 61-64).

- The step of displaying the parameters comprises plotting the parameters along a horizontal time axis of a display (col. 11, lines 19-21) {similar reasoning as above}.
- Displaying the derived parameters {interpreted as "*displaying the input signal*"} as a function of time with the data from the primary measurements {interpreted as "*using the* calculated *bit period as the basis of the scale*" since the "*bit period*" is time dependent} (col. 12, lines 34-36).

In reference to claim 4, Miller discloses all limitations of claim 1 as stated above. In addition, Miller also discloses the limitations of "*the step of locating the first zero space comprises: locating a first transition, X_1, where value of the input signal is more than the threshold value, V_{THRES}, before the first transition, X_1, but less than the threshold value, V_{THRES}, after the first transition X_1, the first transition, X_1, being the first such transition following the offset; and locating a second transition X_2, where value of the input signal is less than the threshold value, V_{THRES}, before the second transition, X_2, but more than the threshold value, V_{THRES}, after the second transition, X_2, the second transition, X_2, being the first such transition following the first transition, X_1*" in the following:

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time that the signal falls below the threshold' is bounded by two consecutive signal transitions across the threshold beginning with a falling

phase and ending with a rising phase, and it satisfies the applicant's definition of "*the first zero space*" in this claim}.

In reference to claim 5, Miller discloses all limitations of claims 1 and 4 as stated above. In addition, Miller also discloses the limitations of "*the step of locating the second zero space comprises: locating a third transition, X_3, where value of the input signal is more than the threshold value, V_{THRES}, before the third transition, X_3, but less than the threshold value, V_{THRES}, after the third transition, X_3, the third transition, X_3, being the first such transition following the second transition X_2; and locating a fourth transition X_4, where value of the input signal is less than the threshold value, V_{THRES}, before the fourth transition, X_4, but more than the threshold value, V_{THRES}, after the fourth transition, X_4, the fourth transition, X_4, being the first such transition following the third transition, X_3*" in the following:

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time that the signal falls below the threshold' is bounded by two consecutive signal transitions across the threshold beginning with a falling phase and ending with a rising phase, and it accurately satisfies the applicant's definition of "*the first zero space*"; also, Fig.3 illustrates consecutive "*zero spaces*" which satisfies the limitation of "*the second zero space*"}.

In reference to claim 6, Miller discloses all limitations of claims 1, 4 and 5 as stated above. In addition, Miller discloses the limitation of "*the step of calculating the bit*

period comprises determining temporal difference between the third transition, X3, and the first transition X1" in the following:

- The period of this signal, however, is derived from the data of the primary measurement...the period can be derived beginning at the falling portion of the signal rather than the rising portion (col. 6, lines 21-31 and Fig. 5, No. 122') {Fig. 5 illustrates the period of the input signal and satisfies the definition of "*temporal difference between the third transition and the first transition*").

In reference to claim 7, Miller satisfies all limitations of claim 1 as stated above and also discloses the limitation of "*displaying the input signal using a multiple of the calculated bit period as the scale*" in the following:

- The period of this signal, however, is derived from the data of the primary measurement...the period can be derived beginning at the falling portion of the signal rather than the rising portion (col. 6, lines 21-31 and Fig. 5, No. 122') {Fig. 5 illustrates the period of the input signal and satisfies the definition of "*temporal difference between the third transition and the first transition*").
- The array holding the derived parameters is padded to facilitate scaling operation such as zoom operations, performed for signal display (col. 4, lines 3-5) {"derived parameters" being plural, interpreted to include multiple bit periods}.

In reference to claim 8, Miller discloses ***an apparatus for displaying an input signal, the apparatus comprising***.

(a) Miller discloses the limitation of "*a processor*" in the following:

- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150) {the CPU is a "*processor*"}.

(b) Miller discloses the limitations of "*storage connected to the processor, the storage including instructions for the processor to sample the input signal*" in the following:

- Data captured {interpreted as "*to sample the input signal*"} in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus {interpreted as "*storage connected to the processor*"} (col. 8, lines 27-30).

(c) Miller discloses the limitation of "*storage connected to the processor, the storage including instructions for the processor to search for a zero space pattern in the sampled signal*" in the following:

- Identifying cycles in the signal and then calculating the parameter for each of these cycles (col. 3, lines 12-13 and Fig. 7) {a cycle is interpreted to include "*a zero space pattern*" and thus the parameter for each cycles is also interpreted to include "*a zero space pattern*"}.
- Comparing the data from the primary measurement to a threshold (col. 10, lines 1-3) {according to the applicant, "*a zero space pattern*" is identified

by making a comparison to a threshold voltage value at appropriate time points}.

- Comparing the primary measurements in each cycle to a threshold (col. 10, lines 58-59) {same reasoning as above}.
- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time that the signal falls below the threshold' is interpreted as "*a zero space pattern*"}.
- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {the CPU, a "*processor*", locates "*a zero space pattern*"}

(d) Miller discloses the limitation of "*storage connected to the processor, the storage including instructions for the processor to locate a first zero space*" in the following:

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time the signal falls below the threshold' is interpreted as "*the zero space*"}.
- Determining times which the primary measurement data exceed the threshold...fall below the threshold (col. 10, lines 4-11) {according to the

applicant, "*a zero space*" is bounded by a fall below the threshold followed by a rise above the threshold; 'times' is plural meaning more than one and therefore interpreted as having "*a first zero space*"}.

- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {the CPU, a "*processor*", locates the "*first zero space*"}

(e) Miller discloses the limitation of "*a storage connected to the processor, the storage including instructions for the processor to locate a second zero space, following the first zero space*" in the following:

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time the signal falls below the threshold' is interpreted as "*the zero space*"}.
- Determining times which the primary measurement data exceed the threshold...fall below the threshold (col. 10, lines 4-11) {according to the applicant, "*a zero space*" is bounded by a fall below the threshold followed by a rise above the threshold; 'times' is plural meaning more than one and therefore interpreted as having "*a first zero space*", and "*a second zero space*"}.

- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {the CPU, a "*processor*", locates the "*a second zero space pattern*"}

(f) Miller discloses the limitation of "*a storage connected to the processor, the storage including instructions for the processor to calculate bit period of the input signal*" in the following:

- The step of deriving the parameters further comprises determining a period for each cycle (col. 10, lines 31-33).
- Determining a change in period in cycles (col. 10, lines 49-51).
- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {the CPU, a "*processor*", calculates the "*bit period*"}

(g) Miller discloses the limitation of "*a storage connected to the processor, the storage including instructions for the processor to display the input signal using the calculated bit period as the basis for a scale*" in the following:

- The array holding the derived parameters is padded to facilitate scaling operation such as zoom operations, performed for signal display (col. 4, lines 3-5) {'derived parameters' includes "*calculated bit period*"}.

- The step of displaying the primary measurement data {interpreted as "*displaying the input signal*"} and the derived parameters {interpreted as "*calculated bit period*"} comprises plotting the detected voltages and derived parameters along a horizontal time axis {interpreted as "*using the calculated bit period as the basis of the scale*" since the "*bit period*" is time dependent} (col. 9, lines 61-64).
- The step of displaying the parameters comprises plotting the parameters along a horizontal time axis of a display (col. 11, lines 19-21) {similar reasoning as above}.
- Displaying the derived parameters {interpreted as "*displaying the input signal*"} as a function of time with the data from the primary measurements {interpreted as "*using the* calculated *bit period as the basis of the scale*" since the "*bit period*" is time dependent} (col. 12, lines 34-36).
- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {the CPU, a "*processor*", displays "*the input signal*"}

In reference to claim 11, Miller discloses all limitations of claim 8 as described above. Additionally, Miller discloses the limitations of "*the storage further comprises instructions for the processor to: locate a first transition, X_1, where value of the input signal is more than the threshold value, V_{THRES}, before the first transition, X_1, but less*

than the threshold value, V_{THRES}, after the first transition X_1, the first transition, X_1, being the first such transition following the offset; and locating a second transition X_2, where value of the input signal is less than the threshold value, V_{THRES}, before the second transition, X_2, but more than the threshold value, V_{THRES}, after the second transition, X_2, the second transition, X_2, being the first such transition following the first transition, X_1" in the following:

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time that the signal falls below the threshold' is bounded by two consecutive signal transitions across the threshold beginning with a falling phase and ending with a rising phase, and it satisfies the applicant's definition of "*the first zero space*" in this claim}.
- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {interpreted as "*the storage connected to the processor…instruction for the processor to*"}

In reference to claim 12, Miller discloses all limitations of claim 11 as described above. Additionally, Miller discloses the limitations of "*the storage further comprises instructions for the processor to locate a third transition, X_3, where value of the input signal is more than the threshold value, V_{THRES}, before the third transition, X_3, but less than the threshold value, V_{THRES}, after the third transition, X_3, the third transition, X_3,*

being the first such transition following the second transition X_2; and locating a fourth transition X_4, where value of the input signal is less than the threshold value, V_{THRES}, before the fourth transition, X_4, but more than the threshold value, V_{THRES}, after the fourth transition, X_4, the fourth transition, X_4, being the first such transition following the third transition, X_3" in the following:

- As also illustrated, a closely related measurement is the time that the signal falls below the threshold TH (col. 5, lines 55-58 and Fig. 3, No. 122') {'the time that the signal falls below the threshold' is bounded by two consecutive signal transitions across the threshold beginning with a falling phase and ending with a rising phase, and it accurately satisfies the applicant's definition of "*the first zero space*"; also, Fig.3 illustrates consecutive "*zero spaces*" which satisfies the limitation of "*the second zero space*"}.
- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {interpreted as "*the storage connected to the processor…instruction for the processor to*"}

In reference to claim 13, Miller discloses all limitations of claim 1, 4 and 5 as described above. In addition, Miller discloses the limitation of "*the storage further comprises instructions for the processor to determine temporal difference between the third transition, X3, and the first transition X1*" in the following:

- The period of this signal, however, is derived from the data of the primary measurement...the period can be derived beginning at the falling portion of the signal rather than the rising portion (col. 6, lines 21-31 and Fig. 5, No. 122') {Fig. 5 illustrates the period of the input signal and satisfies the definition of "*temporal difference between the third transition and the first transition*").
- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {interpreted as "*the storage connected to the processor...instruction for the processor to*"}

In reference to claim 14, Miller discloses all limitations of claims 1, 4, 5, and 13 as described above. In addition, Miller discloses the limitation of "*the storage further comprises instructions for the processor to display the input signal using a multiple of the calculated bit period as the scale*" in the following:

- The period of this signal, however, is derived from the data of the primary measurement...the period can be derived beginning at the falling portion of the signal rather than the rising portion (col. 6, lines 21-31 and Fig. 5, No. 122') {Fig. 5 illustrates the period of the input signal and satisfies the definition of "*temporal difference between the third transition and the first transition*").

- The array holding the derived parameters is padded to facilitate scaling operation such as zoom operations, performed for signal display (col. 4, lines 3-5) {"derived parameters" being plural, interpreted to include multiple bit periods}.
- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30) {interpreted as "*the storage connected to the processor…instruction for the processor to*"}.

In reference to claim 15, Miller discloses all limitations of "*to sample the input signal; search for a zero space pattern in the sampled signal; locate a first zero space; locate a second zero space, following the first zero space; calculate bit period of the input signal; and display the input signal using the calculated bit period as the basis for a scale*" in the same disclosures sited in response to claim 1 above.

In addition, Miller discloses the limitation of "*a machine readable medium comprising program for the machine to display an input signal, the program comprising instructions for the machine to*" in the following:

- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {Miller's invention is a digital storage oscilloscope having a CPU to control the overall operations,

which means a program of some sort is being utilized. Also, the CPU transfers data into a local memory, which is a readable medium.}

In reference to claim 16, Miller discloses all limitations of claim 15 as described above. In addition, Miller discloses the limitation of "*the medium is selected from a group consisting of magnetic disc, optical disc, read only memory (ROM), random access memory (RAM), hard drive, compact disc (CD), flash memory, and solid state memory*" in the following:

- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30). {The term "*consisting of*" implies that only one of the mediums listed is required, and the claim is drafted as a Markush group. Miller's disclosure of 'a local memory' satisfies the definition of at least one of the group "*Magnetic disc, optical disc, ROM, RAM, hard drive, CD, flash memory, and solid state memory*"; specifically at least a "ROM", a "RAM" or a "solid state memory".}

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Gauland et al., U.S. Patent No. 6,571,185.

In reference to claim 2, Miller discloses all limitations of claim 1 as described in paragraph 3 above but does not explicitly disclose the limitation of "*initializing offset and time scale*" though these are standard steps in the display of waveforms. Gauland et al. disclose the said limitation in the following:

- A "setup" {interpreted as "*to initialize*"} may include horizontal timebase settings {interpreted as "*time scale*"}, vertical amplitude multiplication factor (amplification/attenuation) settings, vertical signal offset settings, trigger condition settings, and display persistence and brightness settings (col. 8, lines 59-63).

It would have been obvious to one of ordinary skill in the art to take the teachings of Miller and to combine "*initializing offset and time scale*" of Gauland in order to establish an accurate baseline of the input signal which leads to accurate measurements of appropriate parameters such as the "*zero space*" and the "*bit period*" used in displaying the input signal because of the conventionality of these initialization

processes and because if these initialization steps are not performed, the display may not be accurate. Also, both references are directed to displays as part of a digital oscilloscope.

In reference to claim 9, Miller discloses all limitations of claim 8 as described in paragraph 3 above but does not explicitly disclose the limitations of "*instructions for the processor to initialize offset and time scale*". Gauland et al. discloses the limitation of "*initializing offset and time scale*" in the same manner as described in claim 2 above.

Additionally, Miller discloses the limitation of "*instructions for the processor to*" in the following:

- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into slots in a local memory via bus (col. 8, lines 27-30) {the CPU is "*the processor*" that controls all operations including "*initializing offset and time scale*"}.

It would have been obvious to one of ordinary skill in the art to take the teachings of Miller and to include the "*initializing offset and time scale*" in order to implement a computerized oscilloscope-type apparatus capable of automatically establishing an accurate baseline of the input signal which leads to accurate measurements of appropriate parameters such as the "*zero space"* and the "*bit period*" used in displaying the input signal.

12. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Norton, U.S. Patent No. 4,592,077.

In reference to claim 3, Miller discloses all limitations of claim 1 as shown in paragraph 3 above but does not explicitly disclose the limitation of "*determining whether NRZ autoscale is applicable*". Norton discloses the said limitation in the following:

- NRZ digital data may be modulated by integrating the received signal for the bit period (col. 1, lines 20-22).
- Detecting each transition across the reference axis made by the received NRZ digital data stream (col. 1, lines 43-44) {the determined bit period is then used to autoscale the NRZ data}.

The applicant also discloses that techniques for autoscaling NRZ modulated signals already exist. See the following:

- As for determining the bit period to autoscale the X-axis, techniques exist to determine the bit period for NRZ modulated input signal...such techniques for autoscaling the NRZ modulated signal (paragraph 4, lines 7-12).

It would have been obvious to one of ordinary skill in the art to take the teachings of Miller to include the "*NRZ autoscale*" in order to determine if the input signal is NRZ encoded and to accurately scale the NRZ encoded signal.

In reference to claim 10, Miller discloses all limitations of claim 8 as shown in paragraph 3 above but does not explicitly disclose the limitation of "*instructions for the*

processor to determine whether NRZ autoscale is applicable". Norton discloses the limitation of "*determining whether NRZ autoscale is applicable*" in the following:

- NRZ digital data may be modulated by integrating the received signal for the bit period (col. 1, lines 20-22).
- Detecting each transition across the reference axis made by the received NRZ digital data stream (col. 1, lines 43-44) {the determined bit period is then used to autoscale the NRZ data}.

In addition, Miller discloses the limitation of "*instructions for the processor to*" in the following:

- Central processing unit (CPU) controls the overall operation of the oscilloscope (col. 8, lines 26-27 and Fig. 12, No. 150); Data captured in the waveform memories of the channels are transferred by the CPU into the slots in a local memory via bus (col. 8, lines 27-30) {the CPU is "*the processor*" that controls all operations including "*determining whether NRZ autoscale is applicable*"}.

It would have been obvious to one of ordinary skill in the art to take the teachings of Miller and to include the "*NRZ autoscale*" in order to implement a computerized oscilloscope-type apparatus capable of automatically determining if the input signal is NRZ encoded and to accurately scale the NRZ encoded signal.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior arts disclose an apparatus for displaying input signals and measuring parameters of the signal.

U.S. Patent No.	Inventor(s)
6,525,525	Azinger, Frederick A.
6,621,913	de Vries, Johan
5,495,168	de Vries, Johan
6,556,202	Taraki, Yosuf M. et al.

U.S. Patent Publication No.	Inventor(s)
2001/0001850	Miller, Martin T.

The following prior arts disclose a method and/or apparatus for converting a return-to-zero formatted data to a non-return-to-zero format.

U.S. Patent No.	Inventor(s)
6,448,913	Prucnal, Paul R. et al.

U.S. Patent Publication No.	Inventor(s)
2003/0011839	Liang, Anhui et al.

The following prior art discloses a method and/or apparatus for converting a non-return-to-zero formatted data to a return-to-zero format.

U.S. Patent Publication No.	Inventor(s)
2003/0063696	Tuyl, Roy Van

The following prior art discloses a method for recovery the signal clock and a transition detector.

U.S. Patent Publication No.	Inventor(s)
2003/0156655	Hietala, Vincent M. et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hwa C Lee whose telephone number is 703-305-8987. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 703-305-3885. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Hwa C Lee
Examiner
Art Unit 2672

HCL

JOSEPH MANCUSO
PRIMARY EXAMINER